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CONTRACTING AND PROCUREMENT

Project contracting and procurement management includes the processes required to acquire goods and services from outside the performing organization. For the purposes of this discussion, it does not include the acquisition of capital assets. These processes include:

- ▶ Procurement planning: what to procure and when.
- ▶ Solicitation planning: product requirements and identifying potential sources.
- ▶ Solicitation: obtaining quotations, bids, offers or proposals, as appropriate.
- ▶ Source selection: awarding the bid.
- ▶ Contract administration: the relationship with the seller.
- ▶ Contract closeout: completion and settlement of the contract including resolution of any open items.

These processes interact not only with each other, but with processes in other knowledge areas. Each process may involve effort from one or more individuals or groups of individuals based on the needs of the project. Process interactions are an integral part of the contracting and procurement process.

Project procurement management is discussed from the perspective of the buyer in the buyer-seller relationship.

The *seller* will typically manage their work as a project. In such cases:

- ▶ The *buyer* becomes the customer and is a key stakeholder for the seller.
- ▶ The *seller's* project management team must be concerned with all the processes of project management.
- ▶ The terms and conditions of the contract become a key input to many of the seller's processes. The contract may contain the input (e.g., major deliverables, key milestones, cost objectives) or it may limit the project team's options (e.g., buyer approval of staffing decisions is often required on design projects).

15.1 PROCUREMENT PLANNING

Procurement planning is the process of identifying which project needs can be best met by procuring products or services outside the project organization, and includes consideration of whether to procure, how to procure, what to procure, how much to procure, and when to procure. Procurement planning should also include consideration of potential subcontracts, particularly if the buyer wishes to exercise some degree of influence or control over subcontracting decisions. The project management team shall seek support from specialists in the disciplines of contracting and procurement when needed.

When the project does not obtain products and services from outside the organization, the processes from solicitation planning through contract closeout would normally not be performed. This is most often associated with research and development projects, and on many smaller, in-house projects when the cost of finding and managing an external resource may exceed the potential savings.

15.1.1 Inputs to Procurement Planning:

- ▶ Scope statement: The scope statement describes current project boundaries and provides important information about project needs and strategies that must be considered during procurement planning.
- ▶ Product description: The description of the product provides important information concerning any technical issues or concerns that need to be considered during procurement planning.
- ▶ Procurement resources: An estimate of the resources needed to support the project.
- ▶ Market conditions: The procurement planning process shall consider what products and services are available in the marketplace. Also, are multiple sources of information available?
- ▶ Constraints: Constraints are factors that limit the buyer's options. One of the most common constraints for DOE projects is the availability and timing of funds.

15.1.2 Tools and Techniques for Procurement Planning

- ▶ Make-or-buy analysis: This technique can be used to determine whether a particular product can be produced cost-effectively by the performing organization, or should be procured.

The make-buy process may compare the cost of construction forces on site (when available) implementing a project or portion of a project versus buying the services with fix-priced subcontracts. The guiding principles to a make-or-buy analysis process include:

- ▶ The process is auditable to ensure financial analysis guidelines are consistent.
- ▶ The process yields qualified sources with the lowest evaluated cost.
- ▶ The process is unbiased, i.e., estimates of “make” cost and “buy” cost are prepared by independent organizations.
- ▶ The process is nonexclusionary. Activities will not be performed in-house solely because of qualitative criteria.
- ▶ The Project Manager should initiate the make-or-buy analysis during the conceptual phase prior to CD-2.
- ▶ Expert Judgement: Expert judgment will often be required to assess the inputs to this process.
- ▶ Contract Type Selection: Different types of contracts are more or less appropriate for different types of purchases. Contracts generally fall into one of three broad categories:
 - Fixed Price or Lump Sum Contracts: This category of contract involves a fixed total price for a well-defined product.
 - Cost Reimbursable Contracts: This category of contract involves payment (reimbursement) to the seller for actual costs. Cost reimbursable contracts often include incentives for meeting or exceeding selected project objectives such as schedule targets or total cost.
 - Unit Price Contracts: The seller is paid a preset amount per unit of service, and the total value of the contract is a function of the quantities needed to complete the work.

15.1.3 Outputs from Contracting and Procurement Planning

- ▶ Contracting and Procurement Management Plan: The contracting and procurement management plan (an element of the PEP) shall describe how the remaining procurement processes (from solicitation planning through contract closeout) will be managed. For example:

- What type of contracts will be used?
- Will independent estimates be needed as evaluation criteria?
- Will standardized procurement documents are needed, and how will multiple providers be managed?
- How will procurement be coordinated with other project aspects such as scheduling and performance reporting?

The plan should include a listing of contracts/procurements required including a listing of key dates (e.g., date of issuance of approved specification, procurement start, receipt of approved requisition package by Procurement, contract award date, product delivery date, intermediate milestones, etc.).

- **Statement(s) of Work:** The statement or scope of work (SOW) describes the procurement in sufficient detail to allow prospective sellers to determine if they are capable of providing the item. “Sufficient detail” may vary based on the nature of the item, the needs of the buyer, or the expected contract form.

The statement of work shall be as clear, complete and concise as possible. The SOW should include a description of any collateral services required, such as performance reporting, spare parts or post-project operational support for the procured item. In some applications, there are specific content and format requirements for a SOW.

A recommended practice is to require the successful bidder to prepare a document that describes their understanding of the scope of work. This document must be submitted prior to initiation of work and then reviewed with the buyer to assure a complete understanding of the work to be performed and the product expected.

15.2 SOLICITATION PLANNING

Solicitation planning involves preparing the documents needed to support solicitation of bids, quotes, or proposals.

15.2.1 Inputs to Solicitation Planning

- Contracting and Procurement Management Plan.
- Statement(s) of work.
- Project schedule: Solicitation planning shall be closely coordinated with the project schedule.

15.2.2 Tools and Techniques for Solicitation Planning

- ▶ **Standard Forms:** Standard forms may include contracts, descriptions of procurement items, or standardized versions of all or part of the needed bid documents.
- ▶ **Expert Judgement:** Expert judgment should be sought and used as needed.

15.2.3 Outputs From Solicitation Planning

- ▶ **Contracting and Procurement Documents:** Contracting and Procurement documents are used to solicit proposals from prospective sellers. Common names for different types of procurement documents include Invitation for Bid (IFB), Request for Proposal (RFP), Request for Quotation (RFQ), Invitation for Negotiation, and Contractor Initial Response.

Contracting and procurement documents shall be structured to facilitate accurate and complete responses from prospective sellers, and should always include the relevant statement of work, a description of the desired form of the response and any required contractual provisions (e.g., a copy of a model contract, nondisclosure provisions). Some or all of the content and structure of contracting and procurement documents may be defined by regulation. Procurement documents shall be rigorous enough to ensure consistent, comparable responses, but flexible enough to allow consideration of seller suggestions for better ways to satisfy the requirements.

- ▶ **Evaluation Criteria:** Evaluation criteria are used to rate or score proposals. They may be objective or subjective, and are often included as part of the procurement documents.

Evaluation criteria may be limited to purchase price if the contract/procurement item is known to be readily available from a number of acceptable sources. When this is not the case, other criteria must be identified and documented to support an integrated assessment. For example:

- Understanding of need—as demonstrated by the seller’s proposal.
- Overall or life cycle cost—will the selected seller produce the lowest total cost (purchase cost plus operating cost)?
- Technical capability—does the seller have, or can the seller be reasonably expected to acquire, the technical skills and knowledge needed?

- Management approach—does the seller have, or can the seller be reasonably expected to develop, management processes and procedures to ensure a successful project?
- Financial capacity—does the seller have, or can the seller reasonably be expected to obtain, the financial resources needed?
- Past performance—does the seller have a past history of performance/nonperformance and will the caller provide “best value” for the projects.

15.3 SOLICITATION

Solicitation involves obtaining information (bids, proposals) from prospective sellers on how project needs can best be met. Most of the effort in this process is expended by the prospective sellers, normally at no cost to the project.

15.3.1 Inputs to Solicitation

- ▶ Contracting and Procurement Documents
- ▶ Qualified Seller Lists (QSLs): Most organizations maintain lists or files with information on prospective sellers, known as qualified seller lists (QSLs). A QSL is a composite of quality-related information for suppliers, obtained from various sources. If QSLs are not available, the project team shall develop its own sources. General information is widely available through library directories, relevant local associations, trade catalogs, and similar sources. Detailed information may require site visits or contact with previous customers.

15.3.2 Tools and Techniques for Solicitation

- ▶ Bidder Conferences: Bidder conferences are meetings with prospective sellers prior to preparation of a proposal. They are used to ensure that all prospective sellers have a clear, common understanding of the procurement. Responses to questions may be incorporated into the procurement documents as amendments.
- ▶ Advertising: Existing lists of potential sellers can often be expanded by placing advertisements in general circulation publications such as newspapers or in specialty publications such as professional journals. DOE requires public advertising of subcontracts on a government contract.

15.3.3 Outputs from Solicitation

- ▶ **Proposals:** Proposals are seller-prepared documents that describe the seller's ability and willingness to provide the requested product. They are prepared in accordance with the requirements of the relevant procurement documents.

15.4 SOURCE SELECTION

Source selection involves the receipt of bids or proposals and the application of the evaluation criteria to select a provider. This process is seldom straightforward.

- ▶ Price may be the primary determinant for an off-the-shelf item, but the lowest proposed price may not be the lowest *cost* if the seller proves unable to deliver the product in a timely manner.
- ▶ Proposals are often separated into technical (approach) and commercial (price) sections with each evaluated separately.
- ▶ Multiple sources may be required for critical products. In this case, past performance should be considered.
- ▶ Rank and order proposals to establish a negotiating sequence.

On major procurement items, this process may be iterated. A short list of qualified sellers will be selected based on a preliminary proposal, and then a more detailed evaluation will be conducted based on a more detailed and comprehensive proposal.

15.4.1 Inputs to Source Selection

- ▶ **Proposals**
- ▶ **Evaluation Criteria**
- ▶ **Organizational Policies:** Any and all of the organizations involved in the project may have formal or informal policies that can affect the evaluation of proposals.

15.4.2 Tools and Techniques for Source Selection

- **Contract Negotiation:** Contract negotiation involves clarification and mutual agreement on the structure and requirements of the contract prior to signing of the contract. To the extent possible, final contract language should reflect all agreements reached. Subjects covered generally include, but are not limited to, responsibilities and authorities, applicable terms and law, technical and business management approaches, contract financing, and price.

This process should obtain goods and services of the required quality, at the lowest possible cost, in accordance with the specified schedule and consistent with the terms and conditions. Preparation is the primary key to successful negotiation.

The following guidelines should lead to successful negotiation:

- Develop a negotiation plan outline. Preparing and planning goals, tactics, and strategy are most important.
- Choose a negotiation team and include only required disciplines.
- Agree, in advance, upon realistic cost/commercial/technical objectives as well as a negotiation plan.
- Be informed regarding the suppliers/contractors and their representatives.
- Negotiate in DOE or requestor facilities to increase “control” over the process.
- Negotiate only with supplier/contractor representatives who have the authority to make commitments or concessions.
- Let the lead negotiator control the negotiation. Their duty is to control any sudden changes, surprises, breakdowns in bargaining and other nondirectional situations.
- **Weighting system:** A weighting system is a method for quantifying qualitative data in order to minimize the effect of personal prejudice on source selection. Most systems involve: (1) assigning a numerical weight to each of the evaluation criteria, (2) rating the prospective sellers on each criterion, (3) multiplying the weight by the rating, and (4) totaling the resultant products to compute an overall score.
- **Screening System:** A screening system involves establishing minimum performance requirements for one or more of the evaluation criteria.

- Independent Estimates: When needed, the project shall prepare/provide an independent or government estimates as a check on proposed pricing. Significant differences from these estimates may be an indication that the SOW was not adequate or that the prospective seller either misunderstood or failed to respond fully to the SOW.

15.4.3 Outputs from Source Selection

- Contract: A contract is a mutually binding agreement which obligates the seller to provide the specified product and obligates the buyer to pay for it. A contract is a legal relationship subject to remedy in the courts.

Although all project documents are subject to some form of review and approval, the legally binding nature of a contract usually means that it will be subjected to a more extensive approval process. In all cases, a primary focus of the review and approval process should be to ensure that the contract language describes a product or service that will satisfy the need identified. In the case of major projects undertaken by public agencies, the review process may even include public review of the agreement.

15.5 CONTRACT ADMINISTRATION

Contract administration is the process of ensuring that the seller's performance meets contractual requirements. On larger projects with multiple product and service providers, a key aspect of contract administration is managing the interfaces among the various providers. The legal nature of the contractual relationship makes it imperative that the project team be acutely aware of the legal implications of actions taken when administering the contract.

- Project work release systems to authorize the contractor's work at the appropriate time.
- Performance reporting to monitor contractor cost, schedule, and technical performance.
- Quality control to inspect and verify the adequacy of the contractor's product.
- Change control to ensure that changes are properly approved and that all those with a need-to-know are aware of such changes.

Once a contract is awarded, a Notice to Proceed is issued. The Notice to Proceed is a formal notification to the contractor that work may begin. However, mobilization does not occur until after initial submittal requirements are met.

Submittal requirements for contracts may be found in the specification or scope of work and in the special conditions/general provisions of the procurement package. The procurement package should define the submittal schedule. Submittals may require approval prior to the start of construction or fabrication. The timing of these submittals is important because of their potential impact on the schedule.

Preparing submittals involves the following activities:

- ▶ A submittal identification tracking system should be established.
- ▶ The submittal review process should be clearly defined, and implemented.
- ▶ A submittal log should be used to establish the system/component review matrix, description of item, date received, date transmitted to review organization, date comments returned, resolution and date of final approval.
- ▶ Submittals must accurately represent the equipment specified, delivered and installed at the construction site.
- ▶ Each organization should provide timely turnaround of submittals. An agreement of standard turnaround time should be obtained.
- ▶ A single point of contact for processing of submittals should be established to ensure timely receipt, review and approvals. This applies to both the project and reviewing personnel/organizations.
- ▶ Because contract administration also has a financial management component, payment terms should be defined within the contract and should involve a specific linkage between progress and compensation.

Construction contracts should require the subcontractor to have an approved schedule prior to starting construction activities. Supplemental schedules may be required for the project duration, i.e., thirty days or four weeks rolling. These schedules should identify, at a minimum, the milestone dates defined in the subcontract agreement. Examples of milestone dates are construction start, mechanical complete (system operable), and physical complete (all punch list items complete). Preparing schedules involves the following activities.

- ▶ The overall project schedule should include the dollar values associated with each activity. These values should sum to the total amount of the subcontract.

- ▶ Supplemental schedules should be required that identify and include milestone dates that are specified in the contract documentation.
- ▶ The contractor's schedule should provide a Work Breakdown Structure (WBS) bar chart and "S" curve resource-loaded schedule. This schedule should highlight the contractor's critical path.
- ▶ The contractor's baseline contract schedule should always be maintained. Any negotiated baseline schedule changes should be incorporated into the baseline schedule in a timely manner.

When work activities are completed, and verified by the project, payment requests may be submitted and approved. Progress payments are based on the values loaded into the schedule minus retainage, which is usually ten percent of the requested amount.

The Project Manager and responsible project controls personnel should track invoices submitted versus payments to the contractor. The accounting system must capture the delta in actual and invoiced cost to accurately report contractor costs against performance.

Contract administration also has a financial management component. Payment terms shall be defined within the contract and should involve a specific linkage between progress and compensation.

15.5.1 Inputs to Contract Administration

- ▶ Contract
- ▶ Work Results: The seller's work results—which deliverables have been completed and which have not, to what extent are quality standards being met, what costs have been incurred or committed, etc.
- ▶ Change Requests: Change requests may include modifications to the terms of the contract or to the description of the product or service to be provided.

During the execution of a subcontract, the need to change the contract may occur. This may be the result of a request and agreement. Requests for changes must be submitted in writing. Once negotiated between the supplier and procurement representative, a change order will be issued. Upon issuance of the change order, the contract has been officially amended.

The key issue that all Project Managers face through the course of a project is managing change. Project Managers should remain aware of the following when managing change:

- Close management and control of change can help ensure project success.
- Changes to contracts/procurement documentation baselines must be by approved documentation through the authorized representative (procurement).
- Change documentation must provide an adequate description of the change's impacts to baseline contract cost and schedule supported by an independent cost estimate.
- The contractor should be forced to submit claims in a timely manner.
- The Project Manager should be involved in the negotiation of any major changes.

Sellers must be monitored to ensure that all work is in compliance with contract requirements. The project must keep the subcontractor on schedule, enforce safety procedures, approve payment, educate the subcontractor on site procedures and perform many other tasks as part of the payment process.

15.5.2 Tools and Techniques for Contract Administration

- ▶ **Contract Change Control System:** A contract change control system defines the process by which the contract may be modified, and includes the paperwork, tracking systems, dispute resolution procedures and approval levels necessary for authorizing changes. The contract change control system should be integrated with the project change control system.
- ▶ **Performance Reporting:** Performance reporting provides information about how effectively the seller is achieving the contractual objective. Contract performance reporting should be integrated with overall project performance reporting.
- ▶ **Payment System:** Payments to the seller are usually handled by the accounts payable system of the performing organization. The system must include appropriate reviews and approvals by the project management team.
- ▶ **Incentive:** Some contracts are amenable to incentives as a method of rewarding performance. If used, this technique must be carefully controlled and monitored to assure the process adds value.

15.5.3 Outputs From contract Administration

- ▶ **Correspondence:** Written documentation of certain aspects of buyer/seller communications, such as telephone conversations and meeting minutes.
- ▶ **Contract Changes:** Changes (approved and unapproved) are used as appropriate to upgrade the PEP or other relevant project documentation.
- ▶ **Payment Requests:** This assumes that the project is using an external payment system. If the project has its own internal system, the output here would simply be “payments”.
- ▶ **Historical Records:** Historical records of the subcontractor’s performance starting from award and proceeding through closeout must be maintained. Also, a collection of factually documented observations and records for the project’s protection is kept in the event legal actions (claims) are brought against the project by the seller.

15.6 CONTRACT CLOSEOUT

Contract closeout is similar to administrative closure in that it involves both product verification and administrative closeout. The contract terms and conditions may prescribe specific procedures for contract closeout. Early termination of a contract and termination for the convenience of the government are special cases of contract closeout.

15.6.1 Inputs to Contract Closeout

- ▶ **Contract Documentation:** Contract documentation includes, but is not limited to, the contract itself along with all supporting schedules, requested and approved contract changes, any seller-developed technical documentation, seller performance reports, financial documents such as invoices and payment records, and the results of any contract-related inspections.

15.6.2 Tools and Techniques For Contract Closeout

Procurement Audits: A procurement audit is a structured review of the procurement process from procurement planning through contract administration. The objective of a procurement audit is to identify successes and failures and lessons learned.

- **Acceptance Walkdown or Inspection:** The procurement documents must specify the process for turnover and acceptance of the equipment or service.

The project team and customer representatives must be involved in walkdowns and acceptance of equipment from contractors. After completion and turnover, the subcontractor is relieved from further responsibility except in three circumstances:

- Latent Defects**—A defect existed at the time of acceptance but was not discoverable through reasonable inspection.
- Fraud**—The subcontractor's intent was to deceive the project.
- Warranties**—Continue for a specified time from the date the mechanical completion certificate is completed.

These items must be managed to ensure DOE's interests are protected.

15.6.3 Outputs From Contract Closeout

- **Contract File:** A complete set of indexed records should be prepared for inclusion with the final project records.
- **Formal Acceptance and Closure:** The person or organization responsible for contract administration should provide the seller with formal written notice that the contract has been completed. Requirements for formal acceptance and closure are usually defined in the contract.